(Adopted August 3, 1990)(Amended September 7, 1990)(Amended August 12, 1994)
(Amended December 9, 1994)(Amended November 14, 1997)
(January 20, 2005)

PROPOSED AMENDED RULE 1110.2 EMISSIONS FROM GASEOUS- AND LIQUID-FUELED ENGINES

(a) Purpose

The purpose of Rule 1110.2 is to reduce Oxides of Nitrogen (NO_x), Volatile Organic Compounds (VOCs), and Carbon Monoxide (CO) from engines.

(b) Applicability

All stationary and portable engines over 50 bhp are subject to this rule.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AGRICULTURAL STATIONARY ENGINE is a non-portable engine directly used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. An engine used for the processing or distribution of crops or fowl or animals is not an agricultural engine.

(2~~1~~) APPROVED EMISSION CONTROL PLAN is a control plan, required to be submitted by December 31, 1992, and approved by the Executive Officer prior to November 14, 1997, describing all actions and alternatives, including a schedule of increments of progress to meet or exceed the requirements or applicable emissions limitations in ~~sub~~paragraph (d)(1).

(3~~2~~) EMERGENCY STANDBY ENGINE is an engine which operates as a temporary replacement for primary mechanical or electrical power during periods of fuel or energy shortage or while the primary power supply is under repair.

(4~~3~~) ENGINE is any spark- or compression- ignited internal combustion engine, not including engines used for self-propulsion.

(5~~4~~) EXEMPT COMPOUNDS are defined in District Rule 102 - Definition of Terms.

(65) FACILITY ~~is one or more parcels of land in physical contact, or separated solely by a public roadway, on which engines operate.~~ means any source or group of sources or other air contaminant emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

(76) LOCATION means any single site at a building, structure, facility, or installation. For the purpose of this definition, a site is a space occupied or to be occupied by an engine. For engines which are brought to a facility to perform maintenance on equipment at its permanent or ordinary location, each maintenance site shall be a separate location.

~~(7) NON-ROAD ENGINE is any engine, defined under 40 Code of Federal Regulations (CFR) Part 89, that does not remain or will not remain at a location for more than 12 consecutive months, or a shorter period of time where such period is representative of normal annual source operation at a stationary source that resides at a fixed location for more than 12 months (e.g., seasonal operations such as canning facilities), and meets one of the following:~~

~~(A) Is used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as a mobile crane); or~~

~~(B) Is used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawn mowers and string trimmers); or~~

~~(C) By itself, or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Transportability includes,~~

~~but is not limited to, wheels, skids, carrying handles, dolly, trailer, platform or mounting.~~

(8) PORTABLE ENGINE is an engine that, by itself or in or on a piece of equipment, is designed to be and capable of being carried or moved from one location to another. Indications of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, platform or mounting. The owner or operator must demonstrate the necessity of the engine being periodically moved from one location to another because of the nature of the operation.

An engine is not portable if:

(A) the engine or its replacement remains or will reside at the same location for more than 12 consecutive months. Any engine, such as a back-up or stand-by engine, that replaces an engine at a location and is intended to perform the same function as the engine being replaced, will be included in calculating the consecutive time period. In that case, the cumulative time of both engines, including the time between the removal of the original engine and installation of the replacement engine, will be counted toward the consecutive time period; or

(B) the engine remains or will reside at a location for less than 12 consecutive months where such a period represents the full length of normal annual source operations such as a seasonal source; or

(C) the engine is removed from one location for a period and then it or its equivalent is returned to the same location thereby circumventing the portable engine residence time requirements.

The period during which the engine is maintained at a designated storage facility shall be excluded from the residency time determination.

~~(9) RULE 1110.1 EMISSION CONTROL PLAN is a control plan required by Rule 1110.1.~~

~~(10)~~(9) RATED BRAKE HORSEPOWER (bhp) is the rating specified by the manufacturer, without regard to any derating, and listed on the engine nameplate.

(~~11~~10) STATIONARY ENGINE is an engine which is either attached to a foundation or if not so attached, does not meet the definition of a portable engine. ~~remains or will remain at a single location for more than 12 consecutive months, including any replacement engine for a specific~~

~~application which lasts or is intended to last for more than 12 consecutive months; or will reside at a location for less than 12 consecutive months where such a period represents the full length of normal annual source operations such as a seasonal source.~~

(~~12~~11) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102 ~~any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds~~.

(d) Requirements

(1) Stationary Engine~~s~~ Emission Limits:

(A) Owners/operators of stationary engines with an Approved Emission Control Plan, designating the permanent removal of engines or the replacement of engines with electric motors, shall have done so by December 31, 1999, or the owner/operator shall not operate the engine in a manner that results in emissions that exceed the compliance limits in TABLE I.

TABLE I
ALTERNATIVE TO ELECTRIFICATION

NO_x	VOC	CO
(ppm)[1]	(ppm)[1, 2]	(ppm)[1]
11	30	70

[1] Corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

[2] Measured as carbon.

(B) The owner/~~-~~operator of all other ~~any~~ stationary engine~~s~~ subject to this rule shall~~:~~ not operate the engine in a manner that results in emissions that exceed

~~(A) Remove such engine permanently from service or replace the engine with an electric motor, or~~

~~(B) Reduce emissions from such engine, in accordance with the compliance schedule in paragraph (e)(1), to~~ the compliance limits listed in TABLE I~~I~~.

TABLE I~~I~~

COMPLIANCE LIMITS		
Engines Described in Table III and Rated at Greater Than 50 Bhp and Less Than 500 Bhp		
NO_x	VOC	CO
(ppm)[1] 45	(ppm)[1, 2] 250	(ppm)[1] 2000
Other Stationary Engines Rated at Greater than 50 Bhp		
NO_x	VOC	CO
(ppm)[1] 36	(ppm)[1, 2] 250	(ppm)[1] 2000

[1] Corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

[2] Measured as ~~methane~~carbon.

~~(C) Notwithstanding the provisions in subparagraph (d)(1)(B), the owner or operator of any stationary engines described in Table II may, in lieu of conversion to electrical power or permanent engine removal, reduce the engine CO emissions to no more than 2000 ppm by volume corrected to 15 percent oxygen on a dry basis and averaged over 15 minutes, and reduce the emissions of NO_x, and VOC measured as methane, from such engines to the compliance limit specified by the following formula:~~

~~COMPLIANCE LIMIT FORMULA~~				
~~Compliance Limit~~	~~=~~	~~Reference Limit~~	~~x~~	~~EFF / 25%~~

~~Where:~~

~~Compliance Limit~~ = ~~the allowable NO_x, or VOC emission limit (ppm by volume) corrected to 15 percent oxygen on a dry basis, and averaged over~~

~~15 consecutive minutes.~~

~~Reference Limit = the NO_x or VOC emission limit (ppm by volume) corrected to 15 percent oxygen on a dry basis. The reference limits for various bhp ratings (continuous rating by the manufacturer) are listed in TABLE III.~~

TABLE III STATIONARY ENGINES DESCRIPTION
For electric power generation
Fired by landfill gas
Fired by sewage digester gas
Used to drive a water supply or conveyance pump except for aeration facilities
Fired by oil field-produced gas
For integral engine-compressor applications operating less than 4000 hours per calendar year
Fired by liquefied petroleum gas (LPG)

~~TABLE III~~ ~~REFERENCE LIMITS, ppm~~		
~~Bhp Rating~~	~~NO_x~~	~~VOC~~
~~500 and greater~~	~~36~~	~~250~~
~~Greater Than 50 and Less Than 500~~	~~45~~	~~250~~

~~And,~~

~~EFF = the demonstrated percent efficiency at full load when averaged over 15 consecutive minutes of the engine only without consideration of any downstream energy recovery from the actual heat rate, in Btu/kW-hr, corrected to the HHV (higher heating value) of the fuel; or the manufacturer's continuous rated percent efficiency (manufacturer's rated efficiency) of the engine after correction from LHV (lower heating~~

~~value) to the HHV of the fuel, whichever efficiency is higher. The value of EFF shall not be less than 25 percent. Engines with lower efficiencies will be assigned a 25 percent efficiency for this calculation.~~

~~$$EFF = \frac{3413 \times 100\%}{\text{Actual Heat Rate at HHV of Fuel (Btu/kW-hr)}}$$~~

~~or~~

~~$$EFF = (\text{Manufacturer's Rated Efficiency at LHV}) \times \frac{LHV}{HHV}$$~~

(C) Phase 2 VOC Limit for Stationary Engines

By January 1, 2007, owners/operators of stationary engines shall not operate a stationary engine in a manner that results in VOC emissions, measured as carbon, in excess of 100 ppm, by volume on a dry basis, corrected to 15 percent oxygen, and averaged over 15 minutes.

(2) Portable Engines:

The owner/operator of any portable engine generator subject to this rule shall not use the portable generator for:

(A) Power production into the electric grid, except to maintain grid stability during an emergency event or other unforeseen event that affects grid stability;

(B) Primary or Supplemental power to a building, facility, stationary source, or stationary equipment, except during unforeseen interruptions of electrical power from the serving utility, maintenance and repair operations, and remote operations where grid power is unavailable. For interruptions of electrical power, the operation of a portable generator shall not exceed the time of the actual interruption of power.

~~(A) By December 31, 1999, reduce emissions from such engine to the applicable requirements of TABLE IV for spark ignition engines, or TABLE V for compression ignition engines;~~

~~(B) By January 1, 2010, meet the most stringent emissions standard which is the applicable emissions standard in effect and set forth in Title 13 of the California Code of Regulations for that engine~~

rating. If no emissions standard exists under the California Code of Regulations, then the applicable emissions standard set forth in CFR 40 Part 89 shall apply. If no standard exists under the California Code of Regulations and CFR 40 Part 89, then the applicable requirements of TABLE IV for spark ignition engines or TABLE V for compression ignition engines shall apply; and

(C) Submit to the Executive Officer a letter certifying that the engine is in compliance with the provisions of the paragraph, in accordance with the compliance schedule in paragraph (e)(2).

TABLE IV
PORTABLE SPARK IGNITION ENGINES

NO_x	VOC	CO
80 ppm[3] (1.5 g/bhp-hr)	240 ppm[3] (1.5 g/bhp-hr)	176 ppm[3] (2.0 g/bhp-hr)

[3] Corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

TABLE V
PORTABLE COMPRESSION IGNITION ENGINES

Rated Brake Horsepower	Requirements
Greater Than 50 And Less Than 117	770 ppm[4] NO_x (10.0 g/bhp-hr), or turbocharger and 4-degree injection timing retard
Greater Than or Equal To 117 And Less Than 400	550 ppm[4] NO_x (7.2 g/bhp-hr), or turbocharger and aftercooler/intercooler and 4-degree injection timing retard
Greater Than or Equal To 400	535 ppm[4] NO_x (7.0 g/bhp-hr), or turbocharger and aftercooler/intercooler and 4-degree injection timing retard

[4] Corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

(e) Compliance

~~(1) Stationary Engines:~~

~~The owner/operator of stationary engines subject to the provisions of paragraph (d)(1) shall comply with the requirements of the paragraph in accordance with the following schedule:~~

~~(A) Owners/operators of stationary engines with an amended Rule 1110.1 Emission Control Plan submitted by July 1, 1991, or an Approved Emission Control Plan, designating the permanent removal of engines or the replacement of engines with electric motors, in accordance with subparagraph (d) (1)(A), shall do so by December 31, 1999, or reduce the emissions from the engines to the limits listed in Table VI in accordance with the following schedule:~~

~~(i) By January 1, 1999, submit applications for permit to construct and permit to operate the engines and control equipment;~~

~~(ii) By September 30, 1999, initiate control equipment installation; and~~

~~(iii) By December 31, 1999, have the engine under compliance.~~

~~**TABLE VI**~~
~~**ALTERNATIVE TO ELECTRIFICATION**~~

~~NO_x~~	~~VOC~~	~~CO~~
~~0.15 g/bhp-hr~~	~~0.15 g/bhp-hr~~	~~0.6 g/bhp-hr~~

~~(B) Owners/operators of stationary engines that were altered to come into compliance with subparagraph (c)(1)(A) or paragraph (c)(2) of Rule 1110.1 by August 3, 1990, or stationary engines originally installed to effect compliance with and/or meet the limits in subparagraph (c)(1)(A) or paragraph (c)(2) of Rule 1110.1 by August 3, 1990, shall:~~

~~(i) For engines for which engine modification or add-on control is used to comply with the provisions of paragraph (d)(1):~~

~~(I) By April 30, 2003, submit applications for permits to construct and operate engines and control equipment;~~

(II) By September 30, 2004, initiate engine modification or control equipment installation; and

(III) By December 31, 2004, be in compliance with subparagraph (d)(1)(B) or (d)(1)(C) of this rule as appropriate.

(ii) For engines to be permanently removed from service or replaced with electric motors, do so by December 31, 2004, or reduce the emissions from the engines to the limits listed in Table VI in accordance with the following schedule:.

(I) By April 30, 2003, submit applications for permits to construct and operate engines and control equipment;

(II) By September 30, 2004, initiate engine modification or control equipment installation; and

(III) By December 31, 2004, have engines under compliance.

Engines will be considered originally installed to effect compliance with subparagraph (c)(1)(A) or paragraph (c)(2) of Rule 1110.1 by August 3, 1990, if the owner/operator of engines, prior to August 3, 1990, has acquired a Permit to Construct for these engines and:

undertaken the complete installation of the engines; or

purchased and received the engines on site for installation; or

purchased custom fabricated engines for which fabrication has been substantially completed.

(C) Except as specified in subparagraph (e)(1)(B), or otherwise specified in an Approved Emission Control Plan or amended Rule 1110.1 Emission Control Plan submitted by July 1, 1991:

(i) Any stationary engine installed prior to December 31, 1994 shall be in compliance with the provisions of subparagraph (d)(1)(B), or (d)(1)(C) as appropriate by December 31, 1994.

(ii) Any stationary engine installed after December 31, 1994 but prior to November 14, 1997 shall be in compliance with

~~the provisions of subparagraph (d)(1)(B), or (d)(1)(C) as appropriate before being placed into service.~~

~~(D) Any stationary engine installed after November 14, 1997 shall be in compliance with the provisions of subparagraph (d)(1)(B), or (d)(1)(C) as appropriate before being placed into service.~~

~~(2) Portable Engines:~~

~~The owner/operator of portable engines subject to the provisions of subparagraph (d)(2) shall:~~

~~(A) For engines for which engine modification or add-on control is used to comply with the applicable requirements of TABLE IV for spark-ignition engines, or TABLE V for compression-ignition engines:~~

~~(i) By April 30, 1998, submit applications for permit to construct and permit to operate engines;~~

~~(ii) By September 30, 1999, initiate engine modification or control equipment installation; and~~

~~(iii) By December 31, 1999, have engines in compliance with the applicable requirements of TABLE IV for spark-ignition engines, or TABLE V for compression-ignition engines.~~

~~(B) By December 31, 1999, if the engines are in compliance with the applicable requirements of TABLE IV for spark-ignition engines, or TABLE V for compression-ignition engines, submit to the Executive Officer a letter certifying that the engines are in compliance with the applicable requirements.~~

~~(C) For engines for which engine modification or add-on control is used to comply with the most stringent emissions standard as set forth in subparagraph (d)(2)(B):~~

~~(i) By April 30, 2008, submit applications for permit to construct and permit to operate engines;~~

~~(ii) By September 30, 2009, initiate engine modification or control equipment installation; and~~

~~(iii) By December 31, 2009, have engines in compliance with the most stringent emissions standard.~~

~~(D) By December 31, 2009, if the engines are in compliance with the most stringent emissions standard, submit to the Executive Officer a letter certifying that the engines are in compliance with the emissions standard.~~

(1) Agricultural Stationary Engines:

(A) The owner/operator of agricultural stationary engines subject to the provisions of paragraph (d)(1) and installed or issued a permit to contruct prior to June 3, 2005 shall comply with the requirements of the paragraph in accordance with the following schedule:

(i) By January 1, 2006, submit applications for permit to construct and permit to operate the engines and control equipment;

(ii) By September 30, 2006, initiate engine and control equipment installation; and

(iii) By January 1, 2007, complete source testing and have the engines in compliance with the rule.

(B) The owner/operator of other agricultural stationary engines subject to the provisions of paragraph (d)(1) shall comply with the requirements of the paragraph immediately upon installation.

(2) Stationary Engines Inspection and Monitoring (I&M) Plan:

The owner/operator of stationary engines subject to the I&M plan provisions of subparagraph (f)(1)(D) shall:

(A) By January 1, 2006, submit an initial I&M plan to the Executive Officer;

(B) By May 1, 2006, implement an approved I&M plan or the initial I&M plan if the plan is not yet approved.

(f) Monitoring and Recordkeeping

(1) Stationary engines:

The owner/operator of any engine subject to the provisions of ~~sub~~paragraph (d)(1)~~(B) or (d)(1)(C)~~ of this rule shall meet the following requirements:

(A) Continuous Emission Monitoring

(i) For engines of 1000 bhp and greater, and operating more than two million bhp-hr per calendar year, install, operate and maintain in calibration a NO_x continuous emission

monitoring system (CEMS) to demonstrate compliance with the emission limits of this rule. CEMS shall meet the requirements described in Title 40, Part 60 of the Code of Federal Regulations (40 CFR Part 60), particularly those in Appendix B, Spec. 2 and Appendix F, as well as the reporting requirements of 40 CFR Part 60.7(c), 60.7(d), and 60.13, and shall include equipment that measures and records NO_x exhaust gas concentrations, corrected to 15 percent oxygen on a dry basis.

(ii) On and after January 1, 2007, for facilities with engines subject to paragraph (d)(1) having a combined rating of 500 bhp or greater, install, operate and maintain in calibration a CEMS to demonstrate compliance with the NO_x and CO emission limits of this rule. However, for engines rated below 1000 Bhp and engines rated 1000 bhp and greater and operating less than two million bhp-hr per calendar year, the CEMS may be time shared by multiple engines. The CEMS shall include equipment that measures and records NO_x and CO exhaust gas concentrations, corrected to 15 percent oxygen on a dry basis.

(iii) On and after January 1, 2007, all CEMS shall meet all applicable requirements of Rule 218, including equipment specifications and certification, operating, record keeping and reporting requirements.

(iv) The owner/operator of an engine that is required to install CEMS may request the Executive Officer to approve an alternative monitoring device (or system components) to demonstrate compliance with the emission limits of this rule. The applicant shall demonstrate to the Executive Officer that the proposed alternative monitoring device is at a minimum equivalent in relative accuracy, precision, reliability, and timeliness to a CEMS for that engine, according to the criteria specified in 40 CFR Part 75 Subpart E or the District Alternative Continuous Emissions Monitoring System Performance Specification and

Guidelines. ~~In lieu of the criteria specified in 40 CFR Part 75 Subpart E, substitute criteria is acceptable if the applicant demonstrates to the Executive Officer that the proposed alternative monitoring device is at minimum equivalent in relative accuracy precision, reliability, and timeliness to a CEMS for that engine. Upon approval by the Executive Officer, the substitute criteria shall be submitted to the federal Environmental Protection Agency (EPA) as an amendment to the State Implementation Plan (SIP).~~ The operator may use alternative methods or substitute criteria as defined in 40 CFR 60.2, if they are approved in writing by the Executive Officer, California Air Resources Board (CARB), and the United States Environmental Protection Agency (EPA).

If the alternative monitoring device is denied or fails to be recertified, a CEMS shall be required.

~~(B) For engines subject to the provisions of subparagraph (f)(1)(A),~~

(v) T~~t~~he monitoring system shall have data gathering and retrieval capability approved by the Executive Officer. ~~Data shall be maintained for at least two years and made available for inspection by the Executive Officer.~~

~~(C)~~(B) Elapsed Time Meter

The engine shall have an operational non-resettable totalizing time meter to determine the engine elapsed operating time.

~~(D)~~(C) Source Testing

(i) Provide source test information regarding the exhaust gas, specifically for NO_x, VOC reported as ~~methane~~carbon, and CO concentrations (concentrations in ppm by volume, corrected to 15 percent oxygen on dry basis) at least once every ~~3~~ year~~s~~. Relative accuracy tests required by Rule 218.1 will satisfy this requirement for those pollutants monitored by a CEMS. If the engine has not been operated within three months of the date a source test is required, the source test shall be conducted when the engine resumes

operation for a period longer than either seven consecutive days or 15 cumulative days of operation. The owner/operator of the engine shall keep sufficient operating records to demonstrate that it meets the requirements for extension of the source testing deadlines.

(ii) Emissions source testing shall be conducted for at least 15 minutes at an engine's actual peak load and for at least 30 minutes during normal operation (actual duty cycle). No pre-tests for compliance are permitted. The emission test shall be conducted at least 250 operating hours, or at least one month, after~~since~~ any engine servicing or tuning. Once started, a source test may not be aborted for reasons of non-compliance.

(iii) Prior to any source test required by this rule, a source test protocol shall be prepared and submitted to the Executive Officer for written approval. The source test protocol shall include the name, address and phone number of the source testing contractor and the engine owner/operator, the application number(s) and emission limits, and description of the engine(s) to be tested, the test methods and procedures to be used, a description of which critical parameters will be measured, and how the appropriate range for these parameters shall be established and incorporated into the I&M plan described in subparagraph (f)(1)(D), or verified in an existing plan. The source test protocol shall be approved by the Executive Officer prior to any testing. All source test reports shall be submitted to the Executive Officer within 14 days of completion.

(D) Inspection and Monitoring Plan

Submit to the Executive Officer for written approval and implement an inspection and monitoring (I&M) plan for any engine not equipped with an approved CEMS in accordance with subparagraph (f)(1)(A).

The I&M plan shall include:

(i) Procedures requiring the owner/operator to establish acceptable ranges for control equipment parameters, and

engine operating parameters that source testing and portable analyzer testing has shown result in pollutant concentrations within the rule limits;

(ii) Procedures for continuously monitoring and recording these parameters;

(iii) Procedures for at least weekly inspections of the monitoring data and engine operation;

(iv) Procedures for a diagnosing emission control malfunctions and alerting the owner/operator to the malfunction. Engines shall have a diagnostic system and malfunction indicator light that comply with 40 CFR 1048.110 and are approved by USEPA, CARB or the Executive Officer.

(v) Procedures for at least weekly emissions checks by a portable NOx, CO and O2 analyzer prior to any engine or control system maintenance or tuning. The portable analyzer shall be calibrated, maintained and operated in accordance with the manufacturer's specifications and recommendations and the PROTOCOL FOR THE PERIODIC MONITORING OF NITROGEN OXIDES, CARBON MONOXIDE, AND OXYGEN FROM SOURCES SUBJECT TO SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1110.2.

(vi) Procedures and schedules for preventive and corrective maintenance;

(vii) Procedures for reporting noncompliance to the Executive Officer. If an engine owner/operator finds an engine to be operating outside the acceptable range for control equipment parameters, engine operating parameters, engine exhaust NOx, CO, VOC or oxygen concentrations, the owner/operator shall: report the noncompliance within one hour in the same manner required by paragraph (b)(1) of Rule 430 – Breakdowns; immediately correct the noncompliance or shut down the engine within 24 hours or the end of an operating cycle, in the same manner as required by subparagraph (b)(3)(iv) of Rule 430; and

comply with all requirements of Rule 430 if there was a breakdown.

(viii) The format for all recordkeeping of monitoring and actions required by the plan;

(ix) Procedures for plan revisions. Before any change in I&M plan operations can be implemented, the revised I&M plan shall be submitted to and approved by the Executive Officer.

Rich-burn engines with three-way catalysts shall be equipped with an air-to-fuel ratio controller with an O_2 sensor and feedback control. The parameters to be monitored and recorded for this type of engine shall include:

(i) Engine load

(ii) Oxygen sensor voltage output

(iii) Catalyst inlet and outlet temperature

(iv) Catalyst differential static pressure.

At least monthly and whenever an oxygen sensor is replaced, a portable analyzer shall be used to verify or reestablish the acceptable range of the oxygen sensor at minimum, midpoint and maximum load.

(E) Operating Log

Maintain a monthly engine operating log that includes:

(i) Total hours of operation;

(ii) Type of liquid and/or type of gaseous fuel;

(iii) Fuel consumption (cubic feet of gas or gallons of liquid); and

(iv) Cumulative hours of operation since the last source test required in subparagraph (f)(1)(C~~D~~).

The log shall be available for inspection at any time.

(F) Portable Analyzer Operator Training

The portable analyzer tests required by the I&M Plan requirements of subparagraph (f)(1)(D) shall only be conducted by a ~~unless the~~ person who has completed an appropriate District-approved training program in the operation of portable analyzers and has received a certification issued by the District.

(2) Portable engines:

The owner/operator of any portable engine ~~subject to the provisions of paragraph (d)(2)~~ shall maintain a monthly engine operating log that includes:

(~~A~~i) Total hours of operation;

(~~B~~ii) Type of liquid and/or type of gaseous fuel; and

(~~C~~iii) Fuel consumption (cubic feet of gas or gallons of liquid).

~~The log shall be available for inspection at any time.~~

(3) Recordkeeping for All Engines

All data, logs, test reports and other information required by this rule shall be maintained for at least five years and made available for inspection by the Executive Officer.

(g) Test Methods

Testing to verify compliance with the applicable requirements shall be conducted in accordance with the test methods specified in TABLE VI~~I~~, or any test methods approved by ~~the California Air Resources Board (~~CARB~~)~~ and EPA, and authorized by the Executive Officer.

TABLE IV~~I~~

TESTING METHODS

Pollutant	Method
NO_x	EPA Test Method 20 or District Method 100.1
CO	EPA Test Method 10 or District Method 100.1
VOC	EPA Test Method 25 or District Method 25.1*

* Excluding ethane and methane

A violation of any standard of this rule established by any of the specified test methods, or any test methods approved by the CARB or EPA, and authorized by the Executive Officer, shall constitute a violation of this rule.

~~(h) Technology Assessment for $PM_{2.5}$~~

~~The Executive Officer shall, by December 31, 1999, conduct a technology assessment to determine relative contribution of the engines, which operate for the manufacture of snow and/or operation of ski lifts, to potential $PM_{2.5}$ violations, and report to the Governing Board with recommended actions to be taken, if necessary, to ensure $PM_{2.5}$ standard compliance. In conducting the~~

~~assessment, the Executive Officer shall consider any applicable future CARB surveys on $PM_{2.5}$ emissions.~~

~~(i)~~(h) Exemptions

The provisions of subdivision (d) shall not apply to:

(1) ~~Engines used directly and exclusively by the owner/operator for agricultural operations necessary for the growing of crops or raising of fowl or animals.~~ All orchard wind machines powered by an internal combustion engine.

(2) Emergency standby engines ~~as approved by the Executive Officer~~, which operate ~~less than~~ 200 hours or less per year as determined by an elapsed operating time meter.

(3) Engines used for fire-fighting and flood control.

(4) Laboratory engines used in research and testing purposes.

(5) Engines operated for purposes of performance verification and testing of engines.

(6) Engines operating in the Eastern portion of Riverside County ~~Southeast Desert Air Basin (SEDAB) area~~ not within the South Coast Air Basin or the Coachella Valley Air Basin.~~Quality Management District, but not including the non-attainment Planning Area of the Riverside County SEDAB~~.

(7) Auxiliary engines used to power other engines or gas turbines during start-ups.

(8) Supplemental engines which operate between November 1 of one year and April 15 of the following year for the manufacture of snow and/or operation of ski lifts.

(9) Portable engines that are registered under the state registration program pursuant to Title 13, Article 5 of the California Code of Regulations ~~California Health and Safety Code Sections 41750 to 41755~~.

~~(10) Nonroad engines.~~

~~(11)~~(10)Engines operating on San Clemente Island.